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TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	09/674,996	
	Filing Date	Nov. 2, 2000	
	First Named Inventor	William E. James	
	Art Unit	3764	
	Examiner Name	Tam Nguyen	
Total Number of Pages in This Submission	15	Attorney Docket Number	-----

ENCLOSURES (Check all that apply)		
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant: William E. James Examiner: Tam Nguyen
Application No.: 09/674,996 Art Unit: 3764
Filing Date: Nov. 2, 2000 Confirmation No.: 1327

Title: Automatically Variable Stride Walk-Run-Stepper Pedal Exerciser

APPEAL BRIEF

(under 37 CFR 41.37)

(Revised to meet "Non-Compliant" Notification of May 18, 2007)

Mail Stop Appeal Brief -Patents

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Dear Sirs:

This Appeal Brief follows appellant's Notice of Appeal of Aug. 1, 2006 and acceptance by the Office of Petitions on Jan. 25, 2007 of appellant's Petition for Revival under 37 CFR 1.137(b), filed Jan. 9, 2007.

The Brief responds to the Office Action of Dec. 1, 2003 (to which appellant replied with after-final amendment filed Apr. 30, 2004 which was not entered).

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William E. James 6/12/07

1. Real Party in Interest: William E. James

2. Related Appeals and Interferences: None.

3. Status of Claims:

Claims 1 - 21 are canceled ;

All of the following claims are being appealed :

Claims 22, 23, 26, 27, 36 - 38 and 40 are rejected ;

Claims 24, 25, 28 - 35, 39 and 41* are withdrawn as subject to restriction .

*Note : Claim 41 is a second independent claim and has not received any detailed Action comment.

Claim 40 (dependent) also has not received comment as to reasons for rejection.

4. Status of Amendments:

Appellant's Amendment filed Apr. 30, 2004 (originally sent Feb. 26, 2004 then revised per format requirements of Advisory, Apr. 20 2004) was not entered per Advisory Action , Oct. 4, 2004.

Appellant also filed a Petition to the Director , Jan. 18, 2005 , re: Errors in Final Action. This was dismissed , Jun. 21, 2006 as a "matter for appeal".

5. Summary of Claimed Subject Matter:

Independent Claims 22 and 41:

The invention is a new type of stationary pedal exerciser intended to fill a gap between prior art pedal exercisers - which do not allow realistic, normal variable stride walk-run-jog action - and the typical treadmill, which does. Prior art pedal devices, as outlined in the Specification (pgs. 2 - 5) are incapable of realistic, normal walk-run-jog stepping type strides (with essentially all the user's weight on the stepped down , striding foot) - especially with variable stride lengths as on a treadmill - because : 1) they do not return the pedal (if providing variable stroke) to a constant forward position for step down (necessary for continual in-place normal walking , running) and 2) they do not return the pedal to a forward position at the end of each stride independently of stride (prior, next, or any stride). Instead, they have dependent action, with the returning pedal always moving a distance equal to the rearward stroke of the opposite pedal as in a typical "strider" exerciser where the user must stay at a centered position and swing his feet, always equally weighted on the pedals, in equal and opposite directions about the center. Attempts have been made at variable strokes with crank-controlled motion and also reciprocating pedals clamping and releasing moving drive belts, but these still do not provide a constant forward position and do not have independence of return that is necessary to maintain a constant forward step-down position. With a varying forward position a user would have to move his position with each change of stride, trying to play "hop scotch" with the varying forward position or maintain more or less equal weight on the two pedals as on a "strider". It is obvious to one who has walked or run on treadmills and tried "striders" that the realistic walking action as on the treadmill is not possible on a "strider" or any other prior art pedal type exerciser. These type devices have been cited in Office Actions .

Claim 22: The invention per claim 22 embodies: (claim 22, ln. 4:) "...a substantially constant forward step-down position...", (ln. 6:) "...primarily back and forth strokes variable rearwardly from said forward step-down position ...", and (ln. 8:) "...means for returning said foot pedals to said forward step-down position at the end of each stride independently of stride length." This independence of return from stride or stroke and the constant forward step-down position it enables is essential for a pedal device to support variable normal walk-run-jog strides from stride to stride as described in the Specification (pg. 4, ln. 8 -37).

See next page , "seven versions of the invention", for references to described structure in Specification

Claim 41: The invention per claim 41 provides: (claim 41, ln.3:) "...a forward step-down position;" (ln. 4:) " primarily back and forth strokes variable rearward from said step-down position and " (ln. 6:) "...means returning said foot pedals to said forward step-down position at the end of each stride at velocities substantially greater than stride velocity." It is essential for varying stride length from stride to stride that the returning pedal can return faster than stride velocity, especially going from a long stride to a

shorter one - so there will be a pedal returned from the long stride to the forward step-down position to step on - to end the shorter stride occurring during the (opposite) longer return. With pedal return not dependent on or limited to motion or velocity of the opposite (striding) pedal, velocity of return can be greater than stride velocity, dependent only on mass and friction drag of the pedal and the "return means" force applied. In the extreme case of no concurrent stride or zero velocity of the stepped -on pedal, the return velocity of the opposite pedal would be infinitely greater than stride velocity. (See "seven versions of the invention" below for reference to structure in the Specification.)

All seven versions of the invention fulfill the limitations of claims 22 and 41. The "means for returning" as claimed is described in the Specification for the seven versions of the invention as follows: (This is intended to avoid much repetition, since twenty claims refer to seven versions.):

Version A: (pg. 12- 14 ; Figs. 1 - 3) A linkage train (pg. 13, ln. 4) comprising Link 20 , Lever 22, Link 26, Bellcrank 28 and Link 30 connect downward motion (only) of Left Trackbar 13 and thus, Left Pedal 17 with Right Pedal 16 forward motion. Thus, a relatively small downward displacement of Pedal 17, supported by Spring Damper 15 (pg. 12, ln. 15) , under a user's weight at step-down causes a much longer move of the Right Pedal 16 forward. Likewise, a similar linkage train is shown for returning Left Pedal 17 forward in response to step-down on Right Pedal 16. The resultant action is described on pg. 15, ln. 1- 37 of the Specification. The pedal just ending a stride will quickly return to the forward position regardless of stride length, even without any following stride, simply by the user's ending the stride by stepping on the opposite pedal. Then, the following stride can vary from zero to as long as the machine will allow, since the other pedal will be at the constant forward step-down position very soon after the end of the last stride.

All seven versions of the invention operate in essentially the same manner, "end of stride" or step-down of the forward foot on the forward pedal and lifting of the rear foot at the rear pedal causing the rear pedal to return to the constant forward step-down position.

Version B: (pg. 18, ln.21 thru pg. 19 ; Figs. 4 - 5) Pneumatic cylinders 38, 39 and 42, 43 and tubing 44, 45 are employed in master-slave fashion (39 to 42) to connect the short downward displacement of one pedal (17) at step-down to cause a much longer and faster return forward of the opposite, rear pedal (16).

Version B-2: (pg. 20, ln. 1 - 33 ; Fig. 7) This is an externally powered pneumatic return version not listed in the Office Action, Oct. 30, 2002 species list. A Cylinder 43 returns Pedal 17 when opposite Pedal 16 is stepped on, switching on air pressure from an external source via Limit Valve 46 and vice-versa. Very little downward displacement of the forward pedal is required. A small motor- compressor could be part of the machine to provide the air.

Version C: (pg. 20, ln. 34 - pg. 26, ln. 18; Figs. 9 - 13) Here an electric Motor 69 drives each pedal

rearward during its weighted stride stroke. A Spring 67, compressed by the motor drive through Drive Wheel 73 driving Pedal 16 rearward returns Pedal 16 forward upon lifting of the foot, releasing the pedal from Drive Wheel 73 as Spring Damper 14 raises Pedal 16 as in version 'A' back up to its unloaded level.

Version D: (pg. 26, ln. 19 - pg. 28, ln. 33 ; Figs. 14 - 16) This user- powered version employs a Flywheel/Resistor 96 to regulate pedal stride motion. Weighted Pedal 16 is pushed rearward, aided by gravity if the machine is inclined, driving the flywheel/resistor through Drive Wheel 91 and extending Band Spring 98 which returns the pedal forward when the pedal is unweighted at end of stride.

Version E: (pg. 29, ln. 8 - pg.34, ln. 18 ; Figs. 17 - 20) This pneumatic user- powered version employs an Air Bag 116, 117 under each Pedal 16, 17 to cushion each step and pump air to an Air Tank 120 for use in propelling pedal return strokes. Long Bellows 118, 119 act as light weight, long stroke cylinders to push each corresponding Pedal 16, 17 forward as it is unweighted. Air Bag 116 is unpressurized as Pedal 16 is unweighted as in Fig. 19 which causes Pilot Valve 123 to duct return air pressure to Pedal 16 Bellows 118. This system allows using pedal deceleration energy as each Pedal 16, 17 is stopped at the forward position by corresponding Stop Bellows 131, 132. These pump compressed air to the Air Tank 120, thus recuperating pedal return velocity energy for the next return. This would allow faster returns with less step-down displacement and thus, faster (running) strides. Other sources of compressed air energy may include Arm (exercise) Levers 135 as shown in Fig.20 (pg. 33, ln.37).

Version E-2: (pg. 34, ln. 19 - pg. 35, ln. 16 ; Fig. 22) This is a powered pneumatic version where motor driven Pump 140 pressurizes Air Tank 120 for pedal return and acts to power and regulate rearward (stride) speed. This is accomplished by Pilot Valves 123, 124 controlled by pressure rise in Air Bags 116,117 , sensing step-down to power or drive the same Pedal (16 for 116 and 123) rearward and pressure drop or lifting of the foot to return the Pedal. Also shown is a Motor 69 Speed Control 84 which varies pedal speeds in response to rearward force of the user's foot on the pedal.

Note: The following dependent claims' summaries also reference one or more of the above version tie-in descriptions to the Specification.

Dependent Claims Argued Separately: (all dependent on Claim 22 unless as noted)

Claim 23: "...means for returning returns .. pedals to said forward step-down position using step-down energy."

This is shown in Version A as described above (pg. 4) where the linkage train causes step-down force and displacement to return the opposite pedal, in Version B where the master-slave pneumatic cylinders accomplish the same result (plus adds cushioning of step-down), and Version E with the Air Tank 120 accumulating step-down produced air pressure energy used for pedal return.

Claim 24: "...arresting means, energy conversion means and energy storage means to recuperate energy of returning said foot pedals."

Versions E and E-2 (above, pg. 5) have Stop Bellows 131, 132 which convert pedal return velocity while stopping it into compressed air in Air Tank 120, recuperating energy to be used for pedal return.

Claim 25: "... power and control means connecting the downward force and deflection of a forward one of said pedals to the rearward one of said pedals to propel said rearward pedal forward."

Version B-2 (pg. 4) is the simplest example of this with an external source of compressed air power being controlled by limit valves upon downward deflection of one pedal to return the opposite pedal. Versions E and E-2 also have separate pilot valves to control compressed air power to actuate pedal return in response to step-down on the opposite pedal.

Claim 26: "...means for returning includes fluid means."

This is shown in Versions B, B-2, E and E-2, the fluid being air.

Claim 27: "...means for returning comprises spring means."

This is shown in Versions C and D.

Claim 28: "...further including speed regulating means to control rearward motion of said foot pedals."

This is shown in Version A, with the striding pedal's (16) rearward motion connected to the opposite pedal's (17) upward motion (inverse of pedal 16 return forward being connected to pedal 17 downward motion) which is regulated by Spring Damper 15 as described in the Specification (pg. 16, ln. 24 - 33). All Versions show speed regulation of some kind, by drive wheel under the pedal in Versions C and D, and by fluid flow resistance in Versions B, E, and E-2, with C and E-2 having motor drive regulation.

Claim 29: "...according to claim 28...regulating means comprises spring and damper means."

This is shown in Version A as described for claim 28.

Claim 30: "...according to claim 28...regulating means comprises rotary resistance means."

This is shown in Version D.

Claim 31: "... according to claim 22...motorized speed regulating means."

This is shown in Versions C and E-2.

Claim 32: "... according to claim 31 ...regulating means comprises frictional drive means..."

This is shown in Version C where Drive Wheels 73, 74 drive Pedals 16, 17 and also in Version D.

Claim 33: "... according to claim 31 ...regulating means comprises fluid pumping means ..."

This is shown in Versions E and E-2.

Claim 34: "... according to claim 31 ...sensor means to sense the user's foot force rearward or forward on said foot pedal ...to vary the speed of said motorized means in response to said foot force."

This is shown in Version C (Fig. 13 ; Specification: pg. 24, ln. 27 - pg. 26, ln. 18) and in Version E- 2 (Fig. 22 ; Specification: pg. 34, ln. 19 - pg. 35, ln. 16).

Claim 35: "... according to claim 22 ...including braking means to brake forward motion of said foot pedal when said user is standing on said pedal."

This is shown in Version C (Fig. 12 ; Specification: pg. 23, ln.31 - pg. 24, ln. 26)

Claim 36: "... according to claim 22 ...including cushion means integral with said foot pedals or said support means to cushion the user's step-down..."

This is shown in all versions but is especially visible in Version B (Fig. 4 & 5 ; Specification: pg. 18, ln. 21 - pg.19, ln. 34).

Claim 37: "... according to claim 22 ...means for returning employs stride energy."

This is shown in Version D where stride extends Band Spring 98 for pedal 16 which then returns the pedal (Fig. 15 ; Specification; pg. 27, ln. 34 - pg. 28, ln. 15)

Claim 38: "...claim 22 wherein said means for returning employs energy sources external to a user..."

This is shown in Version B - 2 (Fig. 7 ; Specification; pg. 20, ln. 1 - 33).

Claim 39: "... of claim 38 wherein said external energy sources include fluid power means."

This also is shown in Version B - 2 as above.

Claim 40: " The exerciser of claim 22 wherein said means for returning employs stored energy from a plurality of sources."

This is shown in Version E (Fig. 20 ; Specification: pg. 33, ln. 37 - pg. 34, ln. 10).

6. Grounds of Rejection to be Reviewed on Appeal:

a) Rejection under 35 USC 102 (b): (claims 22, 23, 27, 36 - 38 and 40)

Claims 22, 23, 27, 36 - 38, and 40 stand rejected under 35 USC 102 (b) as being anticipated by U.S. Patent No. 5,910,072. (For evidence relied on see Argument, pg. 9 & Evidence Appendix , pg. 14.)

b) Rejection under 35 USC 103 (a): (claim 26)

Claim 26 stands rejected under 35 USC 103 (a) as being obvious light of U.S. Patent No. 5,910,072 and other (unspecified) prior art. (For evidence relied on see Argument, pg. 11 & Evidence Appendix.)

c) Requirement for restriction and withdrawal : (claims 24, 25, 28 - 35, 39 and 41*) (due to rejection of claim 22) (For evidence relied on see Argument, pg. 11 & Evidence Appendix.)

Claims 24, 25, 28 - 35, 39 and 41* stand subject to restriction (due to rejection of claim 22)

* Claim 41 is an independent claim similar to claim 22.

7. Argument:

a) Rejection under 35 USC 102 (b): (Claims on appeal: 22, 23, 27, 36 - 38 and 40.)

Evidence relied on: Appellant's Response of Aug. 01, 2003 , Office Action of Dec. 01, 2003 and Advisory Action of Oct. 04, 2004 and U.S. Patent No. 5,910,072..

Claim 22: Claim 22 recites: (ln. 4) "... a substantially constant forward step-down position...".

Prior art reference Pat. No. 5,910,072 , Rawls et al is a typical "strider" type exerciser as described in appellant's Background (pg. 2, ln. 33) which allows only swinging of the feet - always equally weighted on the pedals - back and forth with equal and opposite swing strokes. The swing strokes vary equally and oppositely (dependent action - see below) about a central swing axis where the user remains while his forward end of "stride" varies as does the rear (Figs. 4, 7 - 9). There is no constant forward position at which a user can step down. The forward position varies with the swing stroke or stride as does the rear end of stride. The pendulum type swing action - typical of "striders"- will not allow the user to "step down" with his full weight (as in normal walking or running) on a pedal at a forward position , out beyond the swing axis , in any case.

Also, claim 22 recites (ln. 6): " primarily back and forth strokes variable rearward from said forward step-down position...".

Rawls, as above described, varies stride swing fore and aft about a central swing axis (shaft 56, Fig. 4 ; col. 6, ln. 62).

Finally, claim 22 recites (ln. 8): "... means for returning said foot pedals to said forward step-down position at the end of each stride independently (underlined here for emphasis) of stride length.

Rawls' Abstract describes (ln. 5): "A swing control member interconnects the swing arms to provide a dependent (underlined here for emphasis) action with the rearward movement of one pedal causing the forward movement of the other...". This is also shown in Fig. 10 and 15 and others and is described at col.14, ln. 19 - col. 15, ln. 21 (especially col. 14, ln. 63) as well as claim 1, col. 20, ln.14.

Therefore, it is obvious that in Rawls a pedal does not and can not return independently of stride length from varying strides and does not meet claim 22. Rawls does not meet any of the four elements of claim 22. It does not provide: (1) "... stepping, walking, jogging and running in place, enabling automatically variable length strides...", (2) "... a substantially constant forward step-down position...", (3) "...strokes variable rearwardly from said forward step-down position..." and (4) "... means for returning said foot pedals to said forward step-down position at the end of each stride independently of stride length."

Claim 23: "... means for returning returns... pedals to... forward step-down position using step-down energy."

In Rawls the pedals have (Abstract, ln. 8): "...an interconnect member...to provide a dependent action with the downward movement of the rearward end of one pedal causing the rearward end of the other pedal to move upward." (underlined here for emphasis). Also, (ln. 15): "...and the downward and upward movement of the right and left pedals have dependent action,.." This is also described at col. 13 , especially ln. 47. There is no connection between downward motion of a pedal and forward return of the other pedal in Rawls, in fact : (Abstract, ln. 17): " the forward and rearward movements and the downward and upward movements are independent of each other." The pedals are simply balanced, one's vertical (heel) load against the other's as described at col. 11, ln. 47. In appellant's device per claim 23 pedal step-down force and displacement or energy is specifically directed to returning forward the opposite pedal.

Claim 27: "... means for returning comprises spring means."

In Rawls there is no spring means employed in returning the pedal forward. The user swings the pedals fore and aft equally and oppositely with the feet always equally weighted on the pedals. The spring assembly 106 with springs 116 and 118 (col. 12, ln. 5) "...cushion the end portion of the downward travel ... of the...pedals...". There are simpler prior art "stepper" devices that have spring return, but these return the pedal along the same route and distance as the "step" stroke, while appellant's device per claim 22 and 27 has an additional step after step-down, the stride - which varies independently - yet returns the pedal from long and varying strides upon each next step. At the zero limit of stride, appellant's device allows stepping, but it is also a walk- run device allowing a long and variable stride after each step-down as well.

Claim 36: "... including cushion means integral with said foot pedals or said support means to cushion user's step-down ..."

In Rawls there is no step-down as in normal walking or running with essentially all the user's weight on the stepped down, then striding, foot and no step-down cushion means per se is shown as in appellant's combination per claims 22 and 36.

Claim 37: "... means for returning employs stride energy."

Rawls does not meet the limitations of appellant's combination per claims 22 and 37.

Claim 38: "... means for returning employs energy sources external to a user."

Rawls does not show an external energy source returning the pedals. The user swings the pedals back and forth with his feet always on the pedals. Spring assembly 106 has no connection with pedal return as discussed above for claim 27. A spring, with the spring's input being the user, would not be external to the user in any case.

Claim 40: "... means for returning employs stored energy from a plurality of sources."

Appellant can see no commentary in the Action as to reason for rejection and has seen no evidence of this combination per claims 22 and 40 in the prior art. In Rawls only the user returns the pedals as described above for claim 27.

b) Rejection under 35 USC 103 (a): (Claims on appeal: 26)

Evidence relied on: Appellant's Response, Aug. 01, 2003, Office Action, Dec. 01, 2003, Advisory, Oct. 04, 2004, and U.S. Patent No. 5,910,072 .

Claim 26: "... means for returning includes fluid means."

Appellant is not aware of any prior art device that meets the combination as claimed in claims 22 and 26 where ending a stride by step-down (a short vertical motion) causes the opposite pedal to return from varying (long, mostly horizontal) strides simply due to the step alone, using fluid or any other means. Rawls' spring means as discussed above for claim 27 has no connection with returning the pedals.

c) Restriction and Withdrawal of Claims: (Claims on appeal: 24, 25, 28 - 35, 39 and 41)

Evidence relied on: Appellant's Response, Aug. 01, 2003, Office Action, Dec. 01, 2003, Advisory, Oct. 04 2004, and U.S. Patent No. 5,910,072 .

Claims 24, 25, 28- 35, 39 and 41 were withdrawn as having no generic claim. These claims are dependent on claim 22 primarily or secondarily, except for 41, which is an independent claim similar to claim 22. Appellant believes claim 22 is allowable as argued above and is generic to all versions of the invention as described and claim 41 is also allowable as argued and is also generic to all versions of the invention. Claims 24, 25, 28 - 35 and 39 all describe further ramifications of the device as claimed in claim 22. Claim 41 has been argued above under Independent Claims (pg. 3).

8. Claims Appendix:

22. A reciprocating foot pedal exerciser for stepping, walking, jogging and running in place, enabling automatically variable length strides, comprising:

foot pedals for receiving user foot action at a substantially constant forward step-down position on the exerciser;

support means for guiding said foot pedals in primarily back and forth strokes variable rearward from said forward step-down position and

means for returning said foot pedals to said forward step-down position at the end of each stride independently of stride length.

23. The exerciser of claim 22 wherein said means for returning returns the rearmost one of said foot pedals to said forward step-down position using step-down energy.

24. The exerciser of claim 22 having arresting means, energy conversion means and energy storage means to recuperate energy of returning said foot pedals.

25. The exerciser according to claim 22 further including power and control means connecting the downward force and deflection of a forward one of said pedals to the rearward one of said pedals to propel said rearward pedal forward.

26. The exerciser in accordance with claim 22 wherein said means for returning includes fluid means.

27. The exerciser in accordance with claim 22 wherein said means for returning comprises spring means.

28. The exerciser according to claim 22 further including speed regulating means to control rearward motion of said foot pedals.

29. The exerciser according to claim 28 wherein said regulating means comprises spring and damper means.

30. The exerciser according to claim 28 wherein said regulating means comprises rotary resistance means.

31. The exerciser according to claim 22 further including motorized speed regulating means to control rearward motion of said foot pedals.

32. The exerciser according to claim 31 wherein said regulating means comprises frictional drive means interconnecting said motorized means and said foot pedals.

8. Claims Appendix (cont'd.):

33. The exerciser according to claim 31 wherein said regulating means comprises fluid pumping means interconnecting said motorized means and said foot pedals.

34. The exerciser according to claim 31 further comprising :

sensor means to sense the user's foot force rearward or forward on said foot pedal and;

control means to receive a signal from said sensor means and to vary the speed of said motorized

speed regulating means in response to said foot force.

35. The exerciser according to claim 22 further including foot pedal braking means to brake forward motion of said foot pedal when said user is standing on said foot pedal.

36 The exerciser according to claim 22 further including cushion means integral with said foot pedals or said support means to cushion the user's step-down on said foot pedal .

37. The exerciser according to claim 22 wherein said means for returning employs stride energy.

38. The exerciser of claim 22 wherein said means for returning employs energy sources external to a user.

39. The exerciser of claim 38 wherein said external energy sources include fluid power means.

40 The exerciser of claim 22 wherein said means for returning employs stored energy from a plurality of sources.

41. A reciprocating foot pedal exerciser for walking, jogging, running and stepping in place enabling automatically variable length strides, comprising:

foot pedals for receiving user foot action at a forward step-down position;

support means for guiding said foot pedals in primarily back and forth strokes variable rearward from said step-down position and

means returning said foot pedals to said forward step-down position at the end of each stride at velocities substantially greater than stride velocity.

9. Evidence Appendix:

Evidence relied on :

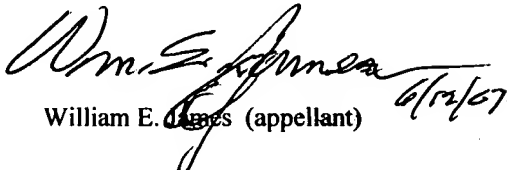
1. Applicant's Response of Aug. 01, 2003 ,
2. Office Action of Dec. 01, 2003 ,
3. Advisory Action of Oct. 04, 2004 .,
4. U.S. Patent No. 5,910,072 .

10. Related Proceedings Appendix:

None

Appellant has endeavored to provide all pertinent information and would sincerely appreciate the Board of Appeals' consideration and efforts to advance this Application which has suffered many delays.

Respectfully submitted,


William E. Jones (appellant) 6/12/07

Tel.: 864-233-8462 & 569-9165

June 12, 2007